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Research & Education News

From the Academic Excellence Council
Minneapolis VA Medical Center



Participation in PTSD Treatment: Who Starts, Who Stays and Who Drops Out?

Approximately one-third of veterans newly diagnosed with posttraumatic stress disorder (PTSD) do not receive any mental health care. Among those who do participate in mental health care, only about half receive an adequate trial of treatment within the six months after the initial PTSD diagnosis.

Because PTSD increases risks for poverty, unemployment, hospitalization, substance abuse, and chronic medical conditions, and because non-participation in mental health treatment contributes to chronicity, understanding the reasons for the lack of full treatment participation is crucial in order to alleviate the chronicity of the illness.



Dr. Spoont

Michelle Spoont, PhD, and her research team have been funded by VA Health Services Research & Development Service (HSR&D) to conduct a three year national survey study of more than 12,000 veterans to find out why so many veterans do not get any care or do not get enough care. The surveys assess beliefs about PTSD and mental health treatment, perceived treatment needs, treatment preferences, and barriers to care. Six months after the veteran is initially surveyed, a second survey will be sent to assess participation in mental health treatment, efficacy of and satisfaction with treatment, and remaining treatment needs.

Although many studies have examined adherence rates to treatment for depression and other mental illnesses, no studies have examined treatment participation for those with PTSD. ***This study will fill in the gap in the PTSD treatment*** evidence by ascertaining rates and extent of treatment participation among veterans for whom PTSD was recently identified as a problem. By using a patient-centered approach to understanding veterans' views of and experiences with PTSD treatment, specific targets in the PTSD treatment pathway amenable to intervention can be identified.

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MINNEAPOLIS VA RESEARCH CENTERS

The Research Service Product Line at the Minneapolis VA Medical Center is among the largest and most active in the VA system. There are currently 145 scientists and investigators. The VA Research funding for fiscal year 2007 was \$28,471,272. In FY 2006, researchers published 348 papers, 170 abstracts, and 17 books and book chapters. The work includes the following:



PHONE: 612/725-2192

WEBSITE:

www.brain.umn.edu/index.htm

The **Brain Sciences Center**, located at the Minneapolis VA Medical Center, is an interdisciplinary research institute, and training center, that focuses on the mechanisms underlying the active, dynamic brain in both health and disease. It is affiliated with the University of Minnesota Health Sciences Center. Since it began in 1991 with staff of three, it has grown to more than 50 researchers, students and staff. The Center's neuroinvestigators collaborate on a wide variety of research studies including: schizophrenia, Alzheimer's Disease, alcoholism, mechanisms of cognitive function, memory and learning, control of movement, and musical analysis of brain signals.



PHONE: 612/725-1979

WEBSITE:

www.hsrp.minneapolis.med.va.gov

The **Center for Chronic Disease Outcomes Research**, a VA Health Services Research and Development (HSR&D) Center of Excellence, is an interdisciplinary community of professionals conducting methodologically rigorous research intended primarily to improve the health care of veterans. Research areas include PTSD, blast injuries, substance use disorders, prostate and urological disease, and colorectal cancer screening. The core investigators include 7 clinically active physicians, most with advanced training in research methodology and a substantial amount of protected time for research. The non-physician core investigators include biostatisticians, behavioral scientists, clinical psychologists, and pharmacologist.



PHONE: 612/467-2785

WEBSITE:

www1.va.gov/minneapolis/services/grecc/serv_grecc_care.html

The **Minneapolis Geriatric Research, Education and Clinical Center** integrates high-quality, cost-effective models of clinical care, basic and applied research, and geriatric education with existing Department of Veterans Affairs and community programs and resources. Clinical research focuses primarily on patients with Alzheimer's disease, and includes: Drug studies with cognitive enhancers and drugs to modify problem behaviors; Behavior modification using applied behavior analysis; Driving safety issues in dementia; Brain imaging studies using PET scanning; and Biochemical studies of CSF.

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**c/o Public Affairs Office (00)
Minneapolis VA Medical Center
One Veterans Drive
Minneapolis MN 5541**

Study Shows Disorders of Consciousness Scale Is Accurate

A study team that included psychologists **Melanie Blahnik, PsyD** and **Sandra Lundgren, PhD**, of the Minneapolis VA Medical Center polytrauma unit found that the Predictive Value of the Disorders of Consciousness Scale (DOCS) was accurate 87% of the time in predicting recovery of consciousness and 88% of the time in predicting lack of recovery.

In the February 2009 issue of *PM&R*, the VA cooperative study group based at Edward Hines Jr. VA Hospital in Chicago evaluated a total of 113 persons with a mean age of 38 years who were unconscious for at least 28 days consecutively after severe brain injury. Seventy-three percent (83 of the 113 patients) had traumatic brain injury and thirty (27%) had other brain injury disorders.

They concluded: "For persons with prolonged disorders of consciousness, ***the findings indicate that evidence-based prognostication for individual patients is possible.*** The implications for research are that the DOCS can be used as a meaningful, reliable, and valid primary outcome to measure treatment effects in clinical trials. The evidence indicates further that DOCS measures merit inclusion in future research that aims to develop multivariate prognostication models."

In-person Diagnosis of Lesions Superior to Teledermatology

In general, the use of teledermatology resulted in poorer diagnostic accuracy when evaluating nonpigmented lesions than clinic-based dermatology, according to research published in the April issue of the *Journal of the American Academy of Dermatology*.

Erin M. Warshaw, MD, of the Minneapolis VA Medical Center, and colleagues analyzed data from 728 subjects with nonpigmented skin neoplasms, nearly all of whom were male and white. An in-person dermatologist and a teledermatologist evaluated each lesion, the latter assessing electronically transmitted macro images with or without polarized light dermatoscopy (PLD), along with patient and lesion history. Each produced a primary diagnosis, up to two differential diagnoses, and a management plan.



Dr. Warshaw

In terms of aggregated diagnostic accuracy (the agreement of one of the diagnoses with histopathology results), ***teledermatology was inferior to in-person assessments.*** However, the groups generated management plans that were equivalent in accuracy. In teledermatology, diagnostic accuracy was better with PLD than macro images alone.

A Review of Managing Chronic COPD

Jeffrey Rubins, MD, Medical Director for Hospice and Palliative Care Services, is lead author of "Managing stable COPD in 2009: incorporating results from recent clinical studies into a goal-directed approach for clinicians" in the January issue of *Postgraduate Medicine* on Managing Stable COPD. The reports says: "Chronic obstructive pulmonary disease (COPD) is prevalent in primary care practice and an important cause of functional decline, hospitalizations, and death. **Recent clinical trials of COPD therapy demonstrate the ability of bronchodilators either alone or in combination with inhaled corticosteroids, to achieve the goals of managing stable disease.** These management goals include: symptom relief, improvement in exercise tolerance and health status, prevention of exacerbations and progression of disease, and reduction in mortality. Recent studies of COPD treatment also provide important safety information to help clinicians address patient concerns about treatment risks. We reviewed recent clinical trials to develop concepts of care for the non-specialist clinician managing patients with stable COPD."

Former Pathology Chief, Donald Gleason, Dies

Most men with prostate cancer know their Gleason score, a measure of malignancy. The scoring system was invented by **Donald Gleason, MD**, former chief of pathology at Minneapolis VA Medical Center and the University of Minnesota, who died in January at age 88. **Dr. Gleason devised his scoring system in the 1960s through his observations of the cellular architecture of the prostate, the gland that produces seminal fluid.** The score is considered the most reliable indicator of the potential for prostate cancer to grow and spread. It helps provide a prognosis and guide treatment, and it is a reference standard in clinical trials testing new therapies. The score is based on a pathologist's microscopic examination of prostate tissue that has been chemically stained after a biopsy. Under a standard microscope, the cells can show in various patterns. To determine a Gleason score, a pathologist assigns a separate numerical grade to the two most predominant architectural patterns of the cancer cells.



Dr. Gleason

Brain Sciences' Georgopoulos Receives French Award



Dr. Georgopoulos and MEG in background

Apostolos P. Georgopoulos, MD, PhD, director of the Brain Sciences Center at the Minneapolis VA and professor at the University of Minnesota, is one of three winners of the 2009 Neuronal Plasticity Prize from La Fondation Ipsen, a French organization dedicated to furthering scientific advancement. He has pioneered the application of analyses based on neuronal populations to decipher brain activity underlying the planning of movement, cognitive processing, and, more recently, brain disease using magnetoencephalography (MEG) is an imaging technique used to measure the magnetic fields produced by electrical activity in the brain.

Researcher Testifies before Congressional Committee

Maureen Murdoch, MD, MPH, Core Investigator, Center for Chronic Disease Outcomes Research, testified March 30 before U.S. House Veterans Committee on PTSD. She reported on three studies: The first study was an historical, administrative database evaluation of all 180,039 Veterans who applied for PTSD disability benefits between 1980 and 1998. The second was a mailed survey of almost 5,000 men and women Veterans who applied for PTSD disability benefits between 1994 and 1998. Surveys were collected from 1998 to 2000, and responses were supplemented with VA administrative data. The third study involved conducting a claims audit of 345 Veterans who also participated in the survey.



Dr. Murdoch

Biochemist Presents Findings Before Gulf War Illness Committee

Senior laboratory investigator **Ronald Bach, PhD**, a biochemist who studies blood clotting, presented study results of Gulf War chronic hypercoagulation (blood thickening) at the research meeting of the Advisory Committee on Gulf War Veterans' Illnesses, June 29-30, at Boston University School of Public Health.

VA Launches 10-Year Health Study of 60,000 New Veterans

The VA has initiated a large, long-term study to look carefully at a broad array of health issues that may affect Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Veterans and their counterparts who served during the same time period. VA's "National Health Study for a New Generation of U.S. Veterans" will begin with 30,000 Veterans deployed to OEF/OIF and 30,000 comparison Veterans who were not deployed.

"This study will help us fulfill President Obama's pledge to 'stand with our Veterans as they face new challenges' by enabling us to understand the health problems of our newest generation of combat Veterans," said **Gerald M. Cross, MD**, VA's acting under secretary for health.

The study will include Veterans who served in each branch of service, representing active duty, Reserve, and National Guard members. Women will be over-sampled to make sure they are represented and will comprise 20 percent of the study. A combination of mail surveys, online surveys, telephone interviews, and in-person physical evaluations will be used.

The study will compare the deployed and non-deployed Veterans in terms of chronic medical conditions, traumatic brain injury (TBI), post traumatic stress disorder (PTSD) and other psychological conditions, general health perceptions, reproductive health, pregnancy outcomes, functional status, use of health care, behavioral risk factors (smoking, drinking, seatbelt use, speeding, motorcycle helmet use, and sexual behavior), and VA disability compensation. VA has contracted with HMS Technologies Inc., to collect the data.



Dr. Cross

New Mobility for Veterans, Service Members, Other Americans

The VA has announced a three-year study of an advanced artificial arm that easily allows those with severe limb loss to pick up a key or hold a pencil. In collaboration with the U.S. Department of Defense Advanced Research Projects Agency (DARPA), the study marks the first large-scale testing of the arm, which allows those who have lost a limb up to their shoulder joint to perform movements while reaching over their head, a previously impossible maneuver for people with a prosthetic arm. Veterans fitted with the arm will provide feedback to guide engineers in refining the prototype, before it is commercialized and also made available through the VA health care system. **A unique feature of the advanced arm is its control system, which works almost like a foot-operated joystick.** An array of sensors embedded in a shoe allows users to maneuver the arm by putting pressure on different parts of the foot. The current version uses wires to relay the signals to the arm, but future versions will be wireless. The arm can also be adapted to work with other control systems, including myoelectric switches, which are wired to residual nerves and muscles in the upper body and respond to movement impulses from the brain, shoulder joysticks or other conventional inputs.



Frederick Downs of VA, wounded in Vietnam, tries the new prosthetic arm.

- **Melissa Polusny, PhD**, and others published in the April issue of *Military Medicine* on the “Impact of Prior Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) Combat Duty on Mental Health in a Predeployment Cohort of National Guard.” 522 soldiers completed a survey assessing pre-deployment risk and resilience factors as well as current levels of PTSD, depressive, and somatic symptoms. Overall, soldiers reported few psychiatric symptoms present before deployment to Iraq. However, compared to soldiers preparing for their first deployment to Iraq, soldiers previously deployed to OEF/OIF reported more PTSD, depressive, and somatic symptoms. Previously OEF/OIF deployed soldiers reported lower perceptions of unit social support, but reported no differences in perceptions of preparedness or concerns about family disruptions. Implications for interventions and training with military personnel before deployment are discussed in the report.
- **Kathleen Johnson, RN, CRN** Vascular Nurse Coordinator, published “Power Injectable Portal Systems” in the March 2009 issue of the *Journal of Radiology Nursing*. The manuscript discusses the recent FDA approval of portacatheters for use in power injection studies. The Minneapolis VA switched to using all power injectable portacatheters so that patients with these catheters do not have to get a peripheral IV inserted each time they have a power injection study such as CT or MRI. The implanted port can be accessed and used-this is great news for those who have these catheters since most of them have poor vascular access.
- **Charles E. Dean, MD** and **Paul D. Thuras, PhD** published “Mortality and tardive dyskinesia: long-term study using the US National Death Index” in the April 2009 issue of *The British Journal of Psychiatry*. Tardive dyskinesia is a variety of dyskinesia (involuntary, repetitive movements) manifesting as a side effect of long-term or high-dose use of dopamine antagonists, usually antipsychotics. They obtained death certificates from the National Death Index on 1621 people repeatedly assessed for tardive dyskinesia by trained raters. They concluded: “Older individuals with tardive dyskinesia treated with conventional antipsychotics appear to have a shortened survival time.”
- **Amanda G. Ferrier-Auerbach, PhD**, and colleagues published “Predictors of alcohol use prior to deployment in National Guard Soldiers” in the *Journal of Addictive Disorders* (August 2009). Frequent and heavy alcohol use is associated with negative mental and physical health consequences. Previous research has suggested that alcohol misuse is associated with demographic, personality, and mental health variables. This study examined the relative contribution of these factors in predicting drinking among National Guard soldiers prior to deployment to a combat zone. Members of a National Guard Brigade Combat Team ($N = 515$) completed questionnaires assessing drinking behaviors in the past year. Younger age predicted higher quantity of drinking, while being unmarried predicted greater total drinking and higher frequency of binge drinking.
- **Joseph Westermeyer, MD**, and **Paul Thuras**, health specialist, co-authored “A Comparison of Substance Use Disorder Severity and Course in American Indian Male and Female Veterans” in January 2009 issue of *American Journal on Addictions*. They concluded, “VA facilities should outreach to American Indian women, who report a willingness to seek mental health services but may avoid VA care.”
- **David Rottenberg, MD**, published the editorial “Thin skin: The cortical signature of prodromal AD (Alzheimer’s disease)?” in the March 24, 2009, issue of *Neurology*.
- **Katherine Kendall, MD**, director of the voice clinic, authored, “High-Speed Laryngeal Imaging Compared with Videostroboscopy in Healthy Subjects” in the March 2009 issue of *Archives of Otolaryngology/ Head and Neck Surgery*. The purpose of the study was to describe normal vocal fold vibratory characteristics recorded with high-speed digital imaging (HSV) of the larynx.